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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/724,767  | 12/02/2003  | Young Woo Yoon       | K-280A              | 1795             |
| 34610   | 7590        | 02/17/2006           | EXAMINER            |                  |
| FLESHNER & KIM, LLP<br>P.O. BOX 221200<br>CHANTILLY, VA 20153 |             |                      | TORRES, JOSEPH D    |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2133                |                  |

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/724,767 | <b>Applicant(s)</b><br>YOON ET AL. |  |
|                              | <b>Examiner</b><br>Joseph D. Torres  | <b>Art Unit</b><br>2133            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☐ Claim(s) 61-86 and 156-192 is/are pending in the application.
- 4a) Of the above claim(s) 84-86 and 156-192 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 61-83 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/898,040.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Newly submitted claims 84-86 and 156-192 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Newly submitted claims 84-86 and 156-192 are directed to interleaving properly classified in 714/701.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 84-86 and 156-192 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Objections***

2. In view of the amendment filed 12/27/2005, all objections to the claims are withdrawn.

***Response to Arguments***

3. Applicant's arguments filed 12/27/2005 have been fully considered but they are not persuasive.

The Examiner presents the 35 U.S.C. 10d(b) rejection of claim 61 for the Applicant's convenience below:

The 3GPP TS 25.212 V3.1.0 reference teaches setting a coding rate of an encoder to an initial value (Channel Coding and Rate Matching blocks in Figure 2 of the 3GPP TS 25.212 V3.1.0 reference are a channel encoder; the last sentence on page 13 teach that the Channel Coding block of the Channel Encoder can be initially configured to be a rate 1/2 convolutional encoder or rate 1/3 convolutional encoder; Section 4.2.3.2.1 on page 14 of the 3GPP TS 25.212 V3.1.0 reference teaches that the Channel Encoder can be initially configured to be a rate 1/3 Turbo encoder with 8-state constituent encoders; Table 1 on page 13 of the 3GPP TS 25.212 V3.1.0 reference teaches that no coding is also an option; **Note: The Authoritative Dictionary of IEEE Standards Terms define code as a set of rule to convert data from one form of representation to another; the Examiner asserts that a channel encoder followed by a rate matcher provides explicit rules for converting data from one form of representation to another, hence; the Channel Coding and Rate Matching blocks in Figure 2 of the 3GPP TS 25.212 V3.1.0 provide an explicit means for encoding channel data);**

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adjusting the coding rate at the encoder by varying the coding rate from the initial value to an adjusted value (4.2.7 on page 20 of the 3GPP TS 25.212 V3.1.0 reference teaches that **the encoder comprising** the Rate Matching block and the Channel Encoder in Figure 2 of the 3GPP TS 25.212 V3.1.0 reference adjusts the coding rate at the Encoder **comprising the Rate Matching block and the Channel Encoder** by varying the coding rate from the initial value to an adjusted value using repetition bits or puncturing); and

encoding data input into the encoder at a coding rate having the adjusted value, wherein the method is implemented during at least one of variable data rate mode and flexible data rate mode (the output of Rate Matching block of the Channel Encoder in Figure 2 of the 3GPP TS 25.212 V3.1.0 reference is encoded data having the adjusted value set by the Rate Matching block), wherein the method is implemented during at least one of variable data rate mode and flexible data rate mode (the 3GPP2, the 3rd Generation Partnership Part 2, standard is specifically designed for two transmission modes, a flexible data rate mode and a variable data rate mode; **Note: even the Applicant, in paragraph [2] on page 1 of the Applicant's own disclosure admits "the 3GPP2 (the 3rd Generation Partnership Part 2) system has two transmission modes, specifically a flexible data rate mode and a variable data rate mode, besides a regular data rate mode"; Furthermore, this limitation is an intended use limitation and structurally the method taught in the 3GPP TS 25.212 V3.1.0 reference has all the structure necessary to carry out all of the steps in claim 61**

**that the Applicant recites as needed for the flexible data rate and variable data rate modes that the Applicant is claiming in claim 61).**

The Applicant contends, "As per claim 66-68, the phrase of "a size of a block interleaves" has been changed to "a channel interleaver size." A channel interleaver used in a communications system has a size which is generally called "a channel interleaver size" or "a channel interleaver block size," and such amendments are clear to one of ordinary skill in the art".

The Examiner disagrees and asserts that it is not clear how an interleaver can have a size since an interleaver is a device based on a method for interleaving. Note: an Interleaver has various numerical parameters depending on how it is implemented; for example, if it is implemented in an array the interleaver will have a number of columns, rows and bits. It is not even clear how the interleaver in claim 6 is implemented and hence it is not clear what interleaver parameter channel interleaver size, as one of ordinary skill in the art at the time the invention was made, refers to.

Note: the Applicant has not addressed the following 35 U.S.C. 112 rejection applied in the last Office Action:

The phrase "a number of bits input into the encoder over a predetermined amount of time" is relative and it is impossible to gauge or ascertain the number of bits input into the decoder that the phrase refers to.

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The Applicant contends, "3GPP TS does not disclose or teach "adjusting the coding rate at the encoder by varying the coding rate from the initial value to an adjusted value," and the combination thereof, as recited in independent claim 61".

The 3GPP TS 25.212 V3.1.0 reference teaches setting a coding rate of an encoder to an initial value (Channel Coding and Rate Matching blocks in Figure 2 of the 3GPP TS 25.212 V3.1.0 reference are a channel encoder; the last sentence on page 13 teach that the Channel Coding block of the Channel Encoder can be initially configured to be a rate 1/2 convolutional encoder or rate 1/3 convolutional encoder; Section 4.2.3.2.1 on page 14 of the 3GPP TS 25.212 V3.1.0 reference teaches that the Channel Encoder can be initially configured to be a rate 1/3 Turbo encoder with 8-state constituent encoders; Table 1 on page 13 of the 3GPP TS 25.212 V3.1.0 reference teaches that no coding is also an option; **Note: The Authoritative Dictionary of IEEE Standards Terms define code as a set of rule to convert data from one form of representation to another; the Examiner asserts that a channel encoder followed by a rate matcher provides explicit rules for converting data from one form of representation to another, hence; the Channel Coding and Rate Matching blocks in Figure 2 of the 3GPP TS 25.212 V3.1.0 provide an explicit means for encoding channel data and are an encoder, by definition**); and

adjusting the coding rate at the encoder by varying the coding rate from the initial value to an adjusted value (4.2.7 on page 20 of the 3GPP TS 25.212 V3.1.0 reference teaches that **the encoder comprising** the Rate Matching block and the Channel Encoder in Figure 2 of the 3GPP TS 25.212 V3.1.0 reference adjusts the coding rate at

the Encoder **comprising the Rate Matching block and the Channel Encoder** by varying the coding rate from the initial value to an adjusted value using repetition bits or puncturing).

The Applicant contends, "The Channel coding block in Figure 2 of 3GPP TS corresponds to "the encoder" in claim 61, which is clear to one of ordinary skill in the art from Figures 2-5 in this application".

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "The Channel coding block in Figure 2 of 3GPP TS") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Note: nowhere does claim 61 recite, "**The Channel coding block in Figure 2 of 3GPP TS**".

In addition, **the Authoritative Dictionary of IEEE Standards Terms define code as a set of rule to convert data from one form of representation to another. The Examiner asserts that a channel encoder followed by a rate matcher provides explicit rules for converting data from one form of representation to another, hence; the Channel Coding and Rate Matching blocks in Figure 2 of the 3GPP TS 25.212 V3.1.0 provide an explicit means for encoding channel data and are an encoder, by definition.**



The Applicant contends, "The Patent Office asserts that the 3GPP2 standard is specifically designed for two transmission modes, a flexible data rate mode and a variable data rate mode (see page 7 of the Office Action). However, the 3GPP TS does not support such a statement. In fact, it is respectfully submitted that the Patent Office is stating the present standard technology, but at the time of the 3GPP TS, the concept of the flexible data rate or the variable data rate was not adopted.

3GPP TS fails to disclose all the features and the combination thereof, as recited, in independent claims 61 and 84".

The Examiner disagrees and asserts that even the Applicant, in paragraph [2] on page 1 of the Applicant's own disclosure admits "the 3GPP2 (the 3rd Generation Partnership Part 2) system has two transmission modes, specifically a flexible data rate mode and a variable data rate mode, besides a regular data rate mode". Furthermore, this limitation is an intended use limitation and structurally the method taught in the 3GPP TS 25.212 V3.1.0 reference has all the structure necessary to carry out all of the steps in claim 61 that the Applicant recites as needed for the flexible data rate and variable data rate modes that the Applicant is claiming in claim 61. See, e.g., In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997) and In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971).

The Examiner disagrees with the applicant and maintains all rejections of claims 61-83. All amendments and arguments by the applicant have been considered. It is the

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Examiner's conclusion that claims 61-83 are not patentably distinct or non-obvious over the prior art of record in view of the references, 3GPP TS 25.212 V3.1.0 reference [3GPP TS 25.212 V3.1.0, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Multiplexing and channel coding (FDD) (**Release 1999**), hereafter referred to as 3GPP TS 25.212 V3.1.0] and Tzukerman; Shimon et al. (US 5438590 A, hereafter referred to as Tzukerman) in view of Ero; Mustafa et al. (US 6332209 B1, hereafter referred to as Ero) as applied in the last office action, filed 08/26/2005. Therefore, the rejection is maintained.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 66-68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 66 recites, "the coding rate of the encoder is varied according to a ratio of a channel interleaver size and **a number of bits input into the encoder over a predetermined amount of time.**" It is not clear how an interleaver can have a size since an interleaver is a device based on a method for interleaving. Note: an Interleaver has various numerical parameters depending on how it is implemented, for example, if it is implemented in an array the interleaver will have a number of columns, rows and bits. It is not clear how the interleaver in claim 6 is implemented and hence it is not clear

what interleaver parameter channel interleaver size, as one of ordinary skill in the art at the time the invention was made, refers to.

Note: the Applicant has not addressed the following 35 U.S.C. 112 rejection applied in the last Office Action:

The phrase “a number of bits input into the encoder over a predetermined amount of time” is relative and it is impossible to gauge or ascertain the number of bits input into the decoder that the phrase refers to.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 61-63, 65-69 and 71 are rejected under 35 U.S.C. 102(b) as being anticipated by 3GPP TS 25.212 V3.1.0 reference [3GPP TS 25.212 V3.1.0, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Multiplexing and channel coding (FDD) (**Release 1999**), hereafter referred to as 3GPP TS 25.212 V3.1.0].

See the Non-Final Action filed 08/26/2005 for detailed action of prior rejections.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. Claims 64 and 75-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP TS 25.212 V3.1.0 reference [3GPP TS 25.212 V3.1.0, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Multiplexing and channel coding (FDD) (**Release 1999**), hereafter referred to as 3GPP TS 25.212 V3.1.0].
- See the Non-Final Action filed 08/26/2005 for detailed action of prior rejections.
8. Claims 70, 72 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP TS 25.212 V3.1.0 reference [3GPP TS 25.212 V3.1.0, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Multiplexing and channel coding (FDD) (**Release 1999**), hereafter referred to as 3GPP TS 25.212

V3.1.0] in view of Tzukerman; Shimon et al. (US 5438590 A, hereafter referred to as Tzukerman).

See the Non-Final Action filed 08/26/2005 for detailed action of prior rejections.

9. Claims 74 and 79-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP TS 25.212 V3.1.0 reference [3GPP TS 25.212 V3.1.0, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Multiplexing and channel coding (FDD) (**Release 1999**), hereafter referred to as 3GPP TS 25.212 V3.1.0] and Tzukerman; Shimon et al. (US 5438590 A, hereafter referred to as Tzukerman) in view of Erozi; Mustafa et al. (US 6332209 B1, hereafter referred to as Erozi).

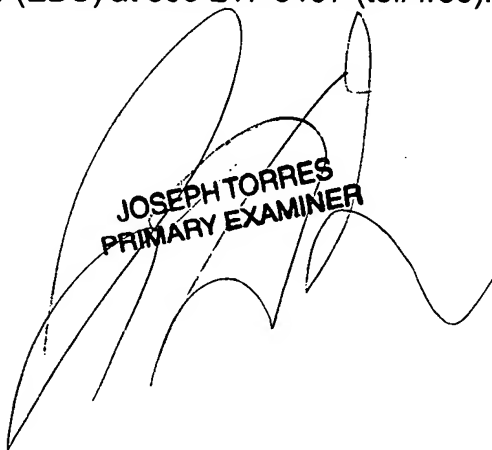
See the Non-Final Action filed 08/26/2005 for detailed action of prior rejections.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JOSEPH TORRES  
PRIMARY EXAMINER

Joseph D. Torres, PhD  
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Art Unit 2133